

SECTION 05210

STEEL JOISTS AND JOIST GIRDERS

The structural engineer will clearly define the design parameters for each steel joist and/or joist girder on the Structural Drawings.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Steel joists and accessories.
- B. Shop applied finishes and field applied touchup.

1.2 DESIGN REQUIREMENTS

- A. Design joists, bridging and accessories as indicated on Drawings.
- B. Design joists, bridging and accessories with SJI Standard Specifications.
- C. Design joists for uniform loads, axial loads, concentrated loads, uplift loads and end moments as indicated on Drawings.
- D. Design joists and bridging for uplift loads in accordance with SJI Technical Digest #6.

1.3 SUBMITTALS

- A. Submit the following in accordance with the requirements of Section 01300.
 - 1. Shop drawings indicating standard designations, configuration, sizes, spacing, and location of joists, bridging and accessories.
 - 2. Calculations demonstrating conformance, sealed by a registered Professional Structural Engineer.
 - 3. Certificate of compliance stating that all joists conform to the requirements of the Steel Joist Institute.
 - 4. Welders' certification in accordance with AWS D1.1 for welders who will perform field welding.

1.4 QUALITY ASSURANCE

- A. Conform to SJI Standard Specifications, Load Tables, and Weight Tables.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel joists:
 - 1. With equipment of adequate capacity
 - 2. Without overstressing or permanently deflecting material.
 - 3. Without damaging finish.

- B. Deliver manufactured material in original unopened packages, containers, or bundles with manufacturer's label intact and legible.
- C. Store materials off ground, under cover, and away from damp surfaces.
- D. Remove damaged, unlabeled or unsatisfactory materials which do not meet this specification from job site.

PART 2 PRODUCTS

2.1 MATERIALS

 Structural engineer will specify materials

- A. Provide open web joist members conforming to SJI Type [K-Series.] [LH Longspan.] [DLH Deep Longspan.] [Joist Girders.]
- B. Provide bolts, nuts and washers conforming to ASTM [A307.] [A325]
- C. Provide shear stud connectors conforming to ASTM A108, grade 1015 forged steel, headed, uncoated, size as shown on Drawings.
- D. Provide welding materials in accordance with AWS D1.1 for type of materials being welded.
- E. Provide primer conforming to SSPC 15, Type 1 red oxide.

2.2 FABRICATION

- A. Fabricate steel joists in accordance with SJI Standard Specifications including headers and other supplementary framing.
- B. Weld in conformance with SJI Standard Specifications.

2.3 FINISHING

- A. Perform finishing work in accordance with SJI Standard Specification.
- B. Do not prime surfaces that will be in contact with concrete, field welds, fireproofing, and bolting with high strength bolts.

PART 3 EXECUTION

3.1 ERECTION

- A. Erect steel joists in accordance with SJI Standard Specifications.
- B. Provide bearing for joists on supports in accordance with SJI or as shown on the Drawings.
- C. [Field weld] [Bolt] steel joists to bearing plate as shown on the Drawings.
- D. Weld in accordance with AWS D1.1.
- E. Install high strength bolts in accordance with AISC Specification for Structural Joints using ASTM A325 or ASTM A490 bolts.
- F. During erection, provide temporary bracing for induced loads and stresses.

- G. Do not permit erection of decking until joists are braced.
- H. Do not field cut or alter joists without approval of Contract Administrator.
- I. After erection, prime any unprimed welds, abrasions, and surfaces. Use primer specified in Part 2.

3.2 ERECTION TOLERANCE

- A. Erect steel joists to the tolerances specified in the SJI Standard Specification.

END OF SECTION